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CLAIMS

What is claimed is:

1. A spindle, comprising:

a shaft;

a sleeve coaxial with the shaft;

a first gap formed between the sleeve and the shaft for facilitating rotation therebetween;

a hub bound to one of the shaft and the sleeve;

a second gap located between the hub and the sleeve, wherein the second gap is larger than the first gap; and wherein

the hub is adapted to be secured to a rotor magnet which is adjacent to a stator, such that the second gap reduces magnetic flux leakage into the sleeve and a substantially negligible amount of flux crosses the first gap into the shaft.

- 2. The spindle of claim 1 wherein the first gap is on the order of a few microns.
- 3. The spindle of claim 1 wherein the shaft is stationary, the sleeve rotates relative to the shaft, and the hub is bound to the sleeve.
- 4. The spindle of claim 1 wherein the second gap is filled with a substantially non-permeable material.
- 5. The spindle of claim 1 wherein the second gap is filled with epoxy.
- 6. The spindle of claim 1 wherein the second gap is the range of 200 to 300 microns.

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1	7.	A precision spindle assembly, comprising in combination:
2		a stator;
3		a spindle hub having a rotor magnet mounted thereto that is rotatable relative
4	to the	stator; wherein the spindle hub comprises:
5		a ferromagnetic stationary shaft;
6		a rotatable ferromagnetic sleeve coaxial with the shaft;
7		a fluid bearing gap formed between the sleeve and the shaft for facilitating
8	rotatio	n therebetween;
9 .		a ferromagnetic hub bound to the sleeve;
10		a large gap located between the hub and the sleeve, wherein the large gap is
1 Language	larger	than the fluid bearing gap; and wherein
		the large gap reduces magnetic flux leakage into the sleeve such that a
The state of the s	substa	ntially negligible amount of flux crosses the fluid bearing gap into the shaft.
Bridge and and and and and and and and and and		
1 Land on the land of the land	8.	The precision spindle assembly of claim 7 wherein the fluid bearing gap is on
2	the ord	der of a few microns.

- The precision spindle assembly of claim 7 wherein the large gap is filled with 9. a substantially non-permeable material.
- The precision spindle assembly of claim 7 wherein the large gap is filled with 10. epoxy.
- The precision spindle assembly of claim 7 wherein the large gap is the range 11. of 200 to 300 microns.

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- 12. A method of insulating a precision spindle assembly against magnetic flux, comprising the steps of:
- (a) providing a stator, and a spindle assembly with a rotor magnet, a shaft, a sleeve, a fluid bearing gap between the sleeve and the shaft, a hub on one of the shaft and the sleeve, and a gap between the hub and the sleeve;
- (b) rotating the rotor magnet relative to the stator to induce a magnetic field; and
- (c) reducing magnetic flux leakage into the sleeve with the gap such that a substantially negligible amount of flux crosses the fluid bearing gap into the shaft.
- 13. The method of claim 12 wherein step (a) comprises forming the fluid bearing gap in the range of a few microns.
- 14. The method of claim 12 wherein step (a) comprises filling the gap with a substantially non-permeable material.
- 15. The method of claim 12 wherein step (a) comprises filling the gap with an epoxy.
- 16. The method of claim 12 wherein step (a) comprises forming the gap in the range of 200 to 300 microns.